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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,309	11/14/2003	Nobuhiro Takeda	1232-5209	2114

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EXAMINER

DURNFORD-GESZVAIN, DILLON

ART UNIT	PAPER NUMBER
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2622

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/714,309	Applicant(s) TAKEDA, NOBUHIRO	
	Examiner Dillon Durnford-Geszvain	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Image Sensing Apparatus Having Unnecessary Charge Discharging Section.

Drawings

2. Figures 6-8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,211,915 (Harada) in view of 2002/0039144 (Yamada).

As to claim 1, Harada teaches an image sensing apparatus (see Fig. 4) comprising: an image sensing element 10 having a photoelectric conversion portion at which a plurality of photoelectric conversion elements (11 and 12) are two-dimensionally arrayed, vertical transfer portions 13 which vertically transfer signal charges stored in the photoelectric conversion portion in accordance with a vertical transfer pulse, a horizontal transfer portion 14 which horizontally transfers signal charges transferred from the vertical transfer portions in accordance with a horizontal transfer pulse, and a charge detection portion 15 which converts signal charges transferred from the horizontal transfer portion into a signal voltage or a signal current; a switch 19 which inputs a reference voltage from a reference power supply E2; and a driving which inputs to one terminal of a capacitor 20 a reset voltage that resets the charge detection portion, and inputs the reference voltage from the reference power supply to the other terminal of the capacitor by controlling said switch 19, wherein the charge detection portion and said switch are arranged at the two terminals of the capacitor (see Fig. 4 and Column 4 lines 16-28).

What Harada does not teach is draining unnecessary charges from the vertical transfer portion. However, Yamada teaches draining unnecessary charges from the vertical transfer portion ([0277]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the charge

draining of Yamada in the apparatus taught by Harada as this would allow for smear charges to be discharged resulting in less noise.

As to claim 2, see the rejection of claim 1 and note that Yamada further teaches that to accomplish the charge draining of claim 1, the device further includes a horizontal drain 45 which drains unnecessary charges is arranged adjacent to the horizontal transfer portion in a vertical direction of the horizontal transfer portion (see Fig. 15), and when unnecessary charges generated at the vertical transfer portions of said image sensing element reaches a predetermined amount (6S) at the horizontal transfer portion, unnecessary charges are drained to the horizontal drain ([0290]).

As to claim 3, see the rejection of claim 1 and note that Yamada further teaches that to accomplish the charge draining of claim 1, while signal charges are stored in the photoelectric conversion portion (note that not all pixels are read out in the apparatus of Yamada, [0282]), the vertical transfer portions are driven at high speed to drain unnecessary charges generated at the vertical transfer portions of said image sensing element (they are driven so as to drain smear charges, [0290]).

As to claim 4, see the rejection of claim 1 and note that Yamada further teaches that to accomplish the charge draining of claim 1, while signal charges are stored in the photoelectric conversion portion (note that not all pixels are read out in the apparatus of Yamada, [0282]), potentials of the vertical transfer portions are set to the same potential

to drain unnecessary charges generated at the vertical transfer portions of said image sensing element (this is part of the driving method of Yamada, see Fig. 16 and [0283]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dillon Durnford-Geszvain whose telephone number is (571) 272-2829. The examiner can normally be reached on Monday through Friday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dillon Durnford-Geszvain

4/1/2007



NGOC-YEN VU
SUPERVISORY PATENT EXAMINER